Time and Money OR Nutritional Value:

The Decision is Yours!

Nutrition and Wellness Project

Developed by
Janet Hallberg & Tammie Paulson
March 2003

TITLE: Time and Money OR Nutritional Value: The Decision is Yours!

GRADE LEVEL: Grades 8-12

PRODUCTS:
Research on Food Products
Nutritional Analysis Report
Cost Analysis
Group Participation in Menu Planning
Time Management
Food Labs & Presentations
Product Evaluations
Final Report

DRIVING QUESTIONS:

How nutritious are convenience foods?
How economical are processed or convenience foods?
What nutritional value do you give up when using processed or convenience foods?
Is lack of time causing families to choose less nutritious food and run up costly food bills?
What long-term health effects may result from poor eating habits?

COMPREHENSIVE STANDARDS: (Family and Consumer Sciences)

By completing the project goals, the student will be able to:

6.0 Demonstrate planning, selecting, storing, preparing, and serving foods to meet nutritional needs of individuals and families across the life span.
- 6.3.2 Select, store, prepare and serve nutritious and aesthetically pleasing foods that meet the health and wellness needs of family members based on available resources.

6.5 Evaluate the impact of science and technology on food composition and safety, nutrition, and wellness of individuals and families.
- 6.5.1 Assess current technology to locate food and nutrition information
- 6.5.2 Determine how scientific and technical advancements have impacted the nutrient content, availability, and safety of foods.
- 6.5.3 Assess how the scientific and technical advancements in food processing, storage, product development, and distribution impact nutrition and wellness.
- 6.5.4 Determine the impact of technological advances on selection, preparation, and home storage of food.

FACS CONTENT KNOWLEDGE:

Key Words: Nutrition Analysis, Economics, Time Management, Meal Planning and Preparation, Convenience, Processing, Proper Diet, Health

ACADEMIC SKILLS:

SD Mathematics Standards (8^{th})
- Goal 3 Indicator 2 Benchmark a: choose measurement tools to achieve specific degrees of accuracy or precision.
- Goal 3 Indicator 2 Benchmark c: apply units of measurement that are usable for specific situations or applications.
- Goal 6 Indicator 1 Benchmark c: make inferences and draw conclusions through data collection and analysis.

SD Communication/Language Arts Standards ($9\text{-}12^{th}$)
- Goal 1 Indicator 4 Benchmark a: access and use multiple information sources for a variety of purposes.

Goal 1 Indicator 4 Benchmark c: compile and synthesize information to make reasonable and informed decisions.
Goal 2 Indicator 4 Benchmark b: write to analyze, synthesize, interpret, and use new information.
Goal 3 Indicator 1 Benchmark b: apply effective listening techniques for creative problem-solving and collaborative decision-making.

PROCESS OUTCOMES:

Foundation Skills: *Basic Skills*- Reading, Writing, Arithmetic/Mathematics, Speaking & Listening
Thinking Skills- Decision Making, Problem Solving
Personal Qualities- Individual Responsibility, Self-Management
Resources: Time, Money, Material and Facilities
Interpersonal: Teamwork, Teaches Others New Skills and Information
Information: Acquires and Evaluates Information

PLANNING TIMELINE:

There is no doubt that we live in a very fast paced society. With both parents often working outside the home, time for meal preparation is limited. We tend to be drawn towards processed and convenience foods that can be prepared quickly and easily as well as be pleasing to the palate. What we often forget to consider are the factors of cost, nutritional value, and long-term health effects when we choose processed and convenience foods.

This project will increase the student's awareness of the cost of preparing certain foods from their original state to a more processed state. Students will also analyze the nutritional value and variation in calories as the foods undergo different stages of processing. The students will plan a menu using different food forms, which meets the RDA requirements. Each group will prepare their selected food form in a lab, and the food will be tasted and evaluated by all class participants. An oral follow-up report will be given by each student.

*This timeline is based on a 50-60 minute class period.

<u>Days 1 & 2</u>

Research a food that is available in various forms such as:
Chicken- (Whole chicken, cut-up fresh or frozen pieces, breaded frozen pieces, deep-fat fried coated pieces, processed in a can)
Apple- (Whole and fresh, applesauce, apple pie, apple juice)
Tomato- (Whole and fresh, canned or stewed tomatoes, tomato paste or sauce, tomato juice)
Macaroni and Cheese- (From Scratch, Boxed Brands, Frozen Entrée)

Research will consist of finding the following information:

a. Nutritional Analysis per serving of the food product in each of its different stages of processing as in the examples stated above.
b. Nutrient density evaluation of the different food forms.
c. Cost Analysis per serving of each of the different food items selected above.
*Research can be obtained from reputable Internet sites, nutrition books, local grocery stores, and library resources.

<u>Day 3</u>

Select a food item that can be purchased in at least 4 different forms (exp. chicken breast with bone and skin intact, boneless chicken breast, frozen chicken breast with breading, or canned chicken breast). The students will break off into 4 groups. Each group will choose one form of the food product that has been selected and plan a menu using their food item. The menu

must include foods from each of the five food groups and at least 1/3 of the recommended daily nutritional allowance for a teenager. The group will complete a nutritional analysis on the menu items. The 4 groups will compare their selected menu and determine which menu would be the healthiest for a teenager's dietary needs and then write their conclusions.

Days 4 & 5

Conduct a food laboratory. The four groups will each prepare the food item that they selected in Day 3 to prepare for the whole class to sample. The students will prepare a market order and time schedule, keep track of the cost of the food preparation, chart the nutritional value, and evaluate the time factor involved in the food preparation. The students will evaluate and rank the different forms of the food item according to taste, looks, nutritional value, time needed for preparation and cost.

Day 6

Follow-up: The students will complete group and individual evaluations from the previous day and give oral reasoning for their choice and ranking of the food forms with all aspects of nutrition, cost, time and appeal being considered. If a guest speaker is scheduled for Day 7, the students need to compile a list of questions to ask the nutritionist that pertain to the American Diet, Eating Habits, Obesity, etc.

Day 7

Invite a nutritionist to be a guest speaker. The topics of discussion should include the eating habits of Americans and how one's health is being affected, as well as the financial burden arising from health care costs because of poor eating habits.

INSTRUCTIONAL SUPPORT:

The computer lab will be available for nutritional research on days 1 and 2. A dietician speaker will be utilized on day seven.

INSTRUCTIONAL ACTIVITIES:

Check out the scoring rubric to see specifications for different grading levels.
Stay within the set timeline in order to meet expectations.
Work within your group and fulfil your responsibilities.
Complete all necessary forms required for your project.
Fill out your final evaluation with all aspects in mind.
Present your follow up evaluation and reasoning to the class.

ASSESSMENTS:

ASSESSMENT OF ACADEMIC CONTENT

Rubric- Assessment of Academic Content

PERFORMANCE TASKS

Nutritional Analysis of Food Product
Market Order Sheet
Master Market Order
Time-Work Schedule
Food Product Evaluation Sheet
Lab Participation and Evaluation Sheet
Follow-up Presentation and Reasoning

RESOURCES:

www.nal.usda.gov/fnic/
www.nat.uiuc.edu/mainnat.html
http://k12s.phast.umass.edu/nutrition/nhohsl/HealthLib.html

Nutritional Analysis

(Form 1)

Name

_____

Food Description	Approximate Measure	Grams	Food Energy	Protein	Vit. A	Vit. C	Thiamine	Riboflavin	Niacin	Calcium	Iron

Evaluate the **Nutrient Density** in each of the food forms listed above and rank them in order from ***highest*** nutrient density to ***lowest***.

_____
_____
_____
_____
_____

Cost Analysis per serving

Item #1 *$*_____

Item #2 $_____
Item #3 $_____
Item #3 $_____

Menu Planning

(Form 2)

Group # _____ **Names** _____

_____

_____

_____

Food Item _____

Form _____ (Exp.- Fresh, Frozen, Breaded, Canned, Etc.)

Plan a menu using the food item listed above. The menu must include the 5 Basic Food Groups and supply at least 1/3 of the recommended daily allowance for a teenager.

MENU

_____

_____

_____

_____

_____

_____

*** Complete a **Nutritional Analysis *(Form 1)*** using the menu items your group has selected making sure you include the correct number of servings.

After comparing the menus from the different groups, which menu would be the healthiest choice for a teenager? _____

Please explain your reasons for making this choice.

_____

_____

_____

_____

_____

_____

_____

Market Order Sheet

(Form 3)

Lab number _____ **Lab group member** _____

Date _____ _____

Period _____ _____

_____

Food product _____ _____

In the chart below, list all of the ingredients in the amounts needed to prepare the food product your lab group is making. After your teacher has distributed your ingredients to your group, us price information supplied by your teacher to complete the third column. (Divide out unit costs when using only part of a food item.) Add up the total cost of your food product. Then divide the total cost by the number of students in your lab group to determine the cost per serving.

Item	Amount	Cost
TOTAL		

Total cost of food product ÷ Number of people in lab group = Cost per serving

_____ ÷ _____ = _____

Time-Work Schedule

(Form 4)

Lab number _____ **Lab group members _____**

Date _____ _____

Period _____ _____

_____

Food product _____

Complete the following chart by listing all of the tasks involved in preparing your food product in the order they need to be done. Remember to list sampling and evaluating your food product as well as cleanup tasks. Determine how much time will be needed to do each task. List the times each task will be started in order to allow time to finish by the end of the class period. In the third column, list the name of the group member who will be responsible for doing each task.

Time	Task	Group Member

Lab Evaluation Sheet

(Form 5)

Lab number _____ **Lab group members _____**

Date _____ _____

Period _____ _____

_____

Food product _____ _____

Evaluate your lab experience using the chart below. Write any specific comments related to your chart evaluation in the space under the chart. Then answer the questions that follow.

Planning

	Poor	Fair	Good	Excellent
Market Order Sheet is compete and accurate.				
Time-Work Schedule evenly divided tasks among group members.				

Preparation

Time-Work Schedule was followed.				
Proper utensils were used.				
Proper techniques were followed.				
Safety precautions were taken.				
Group members cooperated.				

Food Product

Flavor				
Texture				
Appearance				

Cleanup

Dishes and countertops are clean.				
All items are neatly stored in proper places.				

Comments:_____

_____

1. What aspect of this lab experience do you feel was most successful?_____

   _____

   Why?_____
2. What would you change about this lab experience if you were to repeat it? _____

   _____

   Why?_____
3. Describe what you did or did not like about the food product your group prepared. _____

   _____
4. What do you feel you learned from this lab experience? _____

   _____

   _____

Food Product Evaluation Sheet

(Form 6)

Name _____ Date _____ Period _____

The specific appearance, texture, and flavor characteristics that are considered to be desirable are different for each food product. The chart below will help you evaluate and compare various food products. Your teacher will tell you what types of descriptive terms to use when completing this chart. Some examples follow.

1. *Food Product*-In this column, list all the food products being evaluated. Use descriptive adjectives to clearly distinguish one product from another. For instance, you might compare fresh chicken breast with fat and bone, frozen and breaded chicken breast, and canned chicken breast.
2. *Appearance*—In this column, briefly describe how each of the food products in the first column looks. You might use phrases like bright color, golden brown crust, rounded top, pebbly surface or charred edges.
3. *Texture*—In this column, briefly describe the consistency of each food prduct or how it feels when you are eating it. You might use adjectives like tough, tender, flaky, rubbery, stiff, creamy, thick smooth, soft, firm, crisp, lumpy, and chewy.
4. *Flavor*—In this column, briefly describe how each food product tastes. You might use adjectives like raw, sweet, sour, salty, strong, bitter, mild, and spicy.
5. *Other*—Your teacher may ask you to use this column to describe some other characteristic of the food products you are evaluating, such as moistness, freshness, or ripeness.

After filling in the chart, complete the evaluation at the bottom of the page. You may be asked to state which food product you prefer and why. You may be asked what this evaluation indicates about how a food product should be prepared. Your teacher will tell you what type of information you are to include in your evaluation.

Food Product	Appearance	Texture	Flavor	Other _____

Evaluation: (Use the back of this sheet if you need additional space.)

_____

_____

_____

_____

Master Market Order

(Optional Form)

Name_____

Lab _____ **Class Periods** _____

Date Needed _____

Amt.	Deli/Bakery	Amt.	Meat, Poultry, and Fish	Amt.	Dairy Products
Amt.	**Fresh Fruits**	**Amt.**	**Fresh Vegetables**	**Amt.**	**Breads/Cereals**
Amt.	**Staple Foods**	**Amt.**	**Frozen Foods**	**Amt.**	**Canned Foods**
Amt.	**Packaged Entrees/Side Dishes**	**Amt.**	**Paper Products/ Cleaning Supplies**	**Amt.**	**Miscellaneous Items**

Follow-up Form

(Form 7)

Name _____

Each student will complete a group and individual evaluation from the previous day and give oral reasoning for their choice and ranking of the food forms with all aspects of nutrition, cost, time, dietary effects, and appetite appeal being considered.

Write three or more questions about nutrition that you would like answered by a nutrition specialist.

1._____

2._____

3._____

"Time and Money OR Nutritional Value: The Decision is Yours!"Project

Grading Rubric

Name _____

CATEGORY	Excellent (40-37)	Good (36-34)	Fair (33-31)	Poor (30-0)	Total
Nutritional Analysis Research ***(Form 1)***	Research is complete. Nutrient density is clearly evaluated. Cost analysis is complete.	Research is mostly complete. Nutrient density is evaluated. Cost analysis is mostly complete.	Research is lacking. Nutrient density is not explained very well. Cost analysis is incomplete.	There is a lack of proper research, nutrient density explanation and cost analysis.	_____
Menu Planning ***(Form 2)***	Menu is complete and includes the food groups and RDA. Nutritional analysis is complete. Excellent reasons are given for menu choice.	Menu is complete but may lack food groups or RDA requirements. Nutritional analysis is mostly complete. Good reasons are given for menu choice.	Menu is lacking in the food groups and RDA requirements. Nutritional analysis is incomplete. Reasons for menu choice are insufficient.	Menu does not include the 5 food groups or meet RDA requirements. Nutritional analysis & reasons are incomplete or missing.	_____
Food *Laboratory* ***(Forms 3,4,5,6)***	The following have been completed accurately: market order, time schedule, cost, nutritional value, time factor, taste testing, and final evaluation.	The following have been completed fairly accurately: market order, time schedule, cost, nutritional value, time factor, taste testing, and final evaluation.	Two or more of the following have not been completed accurately: market order, time schedule, cost, nutritional value, time factor, taste testing, and final evaluation.	There is lack of information for the following: market order, time schedule, cost, nutritional value, time factor, taste testing, and final evaluation.	_____ x 3 = ____
Follow-up ***(Form 7)***	The individual evaluation and oral reasoning are complete and informative with all aspects of nutrition, cost, time and appeal being considered.	The individual evaluation and oral reasoning are fairly complete and informative with all aspects of nutrition, cost, time and appeal being considered	The individual evaluation and oral reasoning are lacking in information and do not effectively consider nutrition, cost, time and appeal.	The individual evaluation and oral reasoning fail to meet the requirements asked of in the follow-up.	_____
				TOTAL	____